

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE  
PROPERTY OR PRIVILEGE IS CLAIMED ARE AS FOLLOWS:

1. A sliding screen frame for a closure assembly having an opening and an existing track for mounting a screen, said screen frame comprising framing sections having an outer side edge and an inner side edge, and a screen housing from which a screen is payed out and accumulated, said framing sections being adapted proximate the outer side edge to interfit with the existing track of the closure assembly to enable the sliding screen frame to slide across the opening of the closure assembly and the frame sections also being adapted proximate the inner side edge thereof to support and guide the free end of the screen between a fully payed out and a fully accumulated position, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.
2. A sliding screen frame for a closure assembly having an opening and an existing track for mounting a screen, said screen frame comprising framing sections having an outer side edge and an inner side edge, and a screen housing from which a screen is payed out and accumulated, said framing sections being adapted proximate the outer side edge to interfit with the existing track of the closure assembly to enable the sliding screen frame to slide across the opening of the closure assembly and the frame sections also being adapted proximate the inner side edge thereof to support and guide the free end of the screen between a fully payed out and a fully accumulated position, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said

assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft; a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

3. A sliding screen frame for a closure assembly having an opening and an existing track for mounting a screen, said screen frame being moveable between a position wherein the screen frame blocks the opening to second position wherein one is able to pass through the opening, said screen frame comprising framing sections having an inner and outer side edge and a screen housing from which a screen is accumulated and payed out , said framing sections being adapted proximate the inner side edge to support and guide the free end of the screen, and the outer side edge being adapted to engage with the existing tracks of the closure assembly, wherein said screen is moveable across the screen frame from an accumulated position within the housing, to a fully payed out extended position, the free end of the screen riding within the inner side edge of the framing section , said screen frame being moveable to and from a position blocking said opening as said outer side edge of the framing section engages the existing track of the closure assembly, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

4. A sliding screen frame for a closure assembly having an opening and an existing track for mounting a screen, said screen frame being moveable between a position wherein the screen frame blocks the opening to second position wherein one is able to pass through the opening,

said screen frame comprising framing sections having an inner and outer side edge and a screen housing from which a screen is accumulated and payed out , said framing sections being adapted proximate the inner side edge to support and guide the free end of the screen, and the outer side edge being adapted to engage with the existing tracks of the closure assembly, wherein said screen is moveable across the screen frame from an accumulated position within the housing, to a fully payed out extended position, the free end of the screen riding within the inner side edge of the framing section , said screen frame being moveable to and from a position blocking said opening as said outer side edge of the framing section engages the existing track of the closure assembly, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

5. A screen frame for a closure assembly having an existing track for mounting a frame, said screen frame comprising framing sections and a housing for paying out and accumulating a screen, said framing sections having an inner and outer side edge, said inner side edge including guides provided therewith,

the screen being moveable in said guide of the inner side edge of the framing sections between a fully extended position, whereat the screen is substantially payed out from said housing, and a fully retracted position within the housing; said framing section also being adapted, proximate the outer side edge thereof to engage with the existing track disposed with the closure assembly whether the screen is at the fully extended or the fully retracted position, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

6. A screen frame for a closure assembly having an existing track for mounting a frame, said screen frame comprising framing sections and a housing for paying out and accumulating a screen, said framing sections having an inner and outer side edge, said inner side edge including guides provided therewith, the screen being moveable in said guide of the inner side edge of the framing sections between a fully extended position, whereat the screen is substantially payed out from said housing, and a fully retracted position within the housing; said framing section also being adapted, proximate the outer side edge thereof to engage with the existing track disposed with the closure assembly whether the screen is at the fully extended or the fully retracted position, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no

resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

7. A sliding screen frame for a closure assembly including an opening and having an existing track for mounting a screen, said screen frame comprising framing members connected with a roll out screen housing, said framing members having an inner and an outer side edge and being adapted proximate the outer side edge to allow said screen frame to slide across the closure assembly opening, said framing members also being adapted proximate the inner side edge thereof to support a free end of a roll screen to and from a payed out position, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

8. A sliding screen frame for a closure assembly including an opening and having an existing track for mounting a screen, said screen frame comprising framing members connected with a roll out screen housing, said framing members having an inner and an outer side edge and being adapted proximate the outer side edge to allow said screen frame to slide across the closure assembly opening, said framing members also being adapted proximate the inner side edge thereof to support a free end of a roll screen to and from a payed out position, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction

member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

9. The screen frame of claim 7 or 8 further comprising rollers to assist with the sliding motion of the screen frame across the opening on the existing track of the closure assembly.

10. The screen frame of claim 9 wherein the rollers are included with a support bracket for supporting the roll screen in said housing.

11. The screen frame of claim 10 wherein the support bracket includes a section to engage the framing members proximate the corners of the screen frame to assemble the members into the screen frame and to house the rollers for movement of the frame on the existing track of header and sill sections of the closure assembly.

12. The screen frame of claim 11 wherein the bracket also includes supports disposed with the brackets, opposite the rollers to engage a roll tube upon which roll screen is accumulated.

13. A screen frame for a closure assembly having an existing track, said screen frame comprising framing sections and a screen housing, each section including, an inner portion adapted as a support and guide for the free end of a screen payed out from said screen housing, and an outer portion adapted to engage with the existing track of the closure assembly whether the screen is at a fully

payed out or a fully accumulated position, wherein said screen frame may be installed in the existing track of the closure assembly without the need of tools, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

14. A screen frame for a closure assembly having an existing track, said screen frame comprising framing sections and a screen housing, each section including, an inner portion adapted as a support and guide for the free end of a screen payed out from said screen housing, and an outer portion adapted to engage with the existing track of the closure assembly whether the screen is at a fully payed out or a fully accumulated position, wherein said screen frame may be installed in the existing track of the closure assembly without the need of tools, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

15. A frame section for a screen frame to be interconnected with like sections and including a screen housing from which a screen is payed out and

accumulated, said frame section comprising an outer edge portion adapted for engagement with existing tracks of a closure assembly, and an inner edge portion adapted to support and guide the free end of the screen, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

16. A frame section for a screen frame to be interconnected with like sections and including a screen housing from which a screen is payed out and accumulated, said frame section comprising an outer edge portion adapted for engagement with existing tracks of a closure assembly, and an inner edge portion adapted to support and guide the free end of the screen, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

17. A kit of components for assembly of a screen frame comprising framing sections, a screen housing, and a screen accumulated and payed out from said housing, said framing sections being adapted to engage existing tracks of a



closure assembly and also being adapted to guide and support the free end of the screen as it is payed out and accumulated from said screen housing, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

18. A kit of components for assembly of a screen frame comprising framing sections, a screen housing, and a screen accumulated and payed out from said housing, said framing sections being adapted to engage existing tracks of a closure assembly and also being adapted to guide and support the free end of the screen as it is payed out and accumulated from said screen housing, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

19. A kit of components for assembly of a screen frame comprising framing sections, a housing for a roll screen, and a roll screen, said kit being assembled to provide the screen frame of claim 1 to 8, and 13 to 16.

20. A screen frame construction for a closure assembly comprising framing sections having an inner and outer side edge, and a screen housing from which a screen is payed out and accumulated, said frame sections being adapted proximate the outer side edge to interfit with existing tracks of the closure assembly, and said framing sections being adapted proximate the inner side edge to support and guide a screen as it is payed out from the housing, further comprising a mitreless corner connector having a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

21. A screen frame construction for a closure assembly comprising framing sections having an inner and outer side edge, and a screen housing from which a screen is payed out and accumulated, said frame sections being adapted proximate the outer side edge to interfit with existing tracks of the closure assembly, and said framing sections being adapted proximate the inner side edge to support and guide a screen as it is payed out from the housing, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, a bracket containing said element coupled to said shaft, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket and said shaft for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

22. The screen frame of claim 20 or 21 wherein said screen is a roll screen.

23. A support bracket for a roll screen having two ends comprising a support for said roll screen proximate one end of the bracket and also including a section to engage the framing members proximate the corners of the screen frame to assemble the members into the screen frame, further comprising a speed control braking assembly, for a rotating hollow shaft for accommodating said roll screen, and to impede rotation of said shaft at a predetermined speed, said assembly having a centrifugal braking element, the bracket containing said element and being coupled to said shaft proximate said support, a friction member disposed with said bracket, a freewheeling torque tube coupled to said bracket proximate said support and to said shaft remote said support, said tube for controlling motion of said braking element, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.

24. The bracket of claim 23 wherein the material from which said bracket is made is selected from nylon, plastic, and Delrin®.

25. The screen frame of claim 3, 4, 13, 14, 20 or 21 wherein the closure assembly is a casement window.

26. The screen frame of claim 1, 2, 3, 4, 7 or 8 wherein the closure assembly is a sliding window.

27. The screen frame of claim 3, 4, 13, 14, 20 or 21 wherein the closure assembly is a tilt and slide window.

28. The screen frame of claim 3, 4, 13, 14, 20 or 21 wherein the closure assembly is a double hung window.

29. The screen frame of claim 1, 2, 3, 4, 7 or 8 wherein the closure assembly is a patio door.

30. The screen frame of claim 3, 4, 13, 14, 20 or 21 wherein the closure assembly is a pivoting door.

31. The screen frame of claim 3, 4, 13, 14, 20 or 21 wherein the closure assembly is an awning window.

32. A retainer, (preferably a wind retainer), for installation adjacent the edge of a screen cloth and to guide the motion of said screen cloth in a channel in track of a screen assembly, said retainer comprising a head part extending away from the edge of said screen cloth and two flange parts extending from said head part at substantially ninety degrees, and capturing there-between the screen cloth which is fastened thereto, said retainer allowing the screen cloth to roll up flat when retracted and does not allow the accumulated screen to go out of round in doing so.

33. A torque tube for fastening to a hollow shaft proximate one end and for engaging a support bracket for the hollow shaft at the other, wherein the torque tube is free wheeling on said support bracket, said tube having a substantially "Z" shaped flange to interconnect the part for engaging the hollow shaft with the part engaging the support bracket, wherein said "Z" shaped flange permits flexing of the torque tube to accommodate a predetermined variation in the

hollow of said hollow shaft and wherein the torque tube tightens if efforts are made to separate the shaft and the torque tube (preferably providing for .010 inch variation in the hollow shaft dimension.)

34. A mitreless corner connector comprising a generally "L" shaped member including two perpendicular legs extending from a central box shaped part, said connector for connecting adjacent framing sections without the need for mitre cuts thereof and said box shaped part for butting with the adjacent framing sections when joined to said connector to establish continuity with the adjacent edges of said sections.

35. A speed control braking assembly for a rotating hollow shaft to impede rotation of said shaft at a predetermined speed, said assembly comprising a centrifugal braking element, a housing for said element coupled to said shaft, a friction member disposed in said housing, a freewheeling torque tube coupled to said housing and said shaft for controlling motion of said braking elements, wherein at low speed there is effectively no resistance to rotation of the shaft but at a predetermined speed the shaft speed is controlled when the braking element is moved by centrifugal force to engage said friction part to thereby inhibit motion of said shaft.